

WHAT IS CLAIMED IS:

1. A method for supplying zinc ions to an alkaline zinc plating bath, wherein a source of zinc ions and a zinc dissolution accelerating metal are brought into electrically direct or indirect contact with each other, and the source of zinc ions and the zinc dissolution accelerating metal are shaken, vibrated or rotated in a plating solution in order to accelerate zinc dissolution from the source of zinc ions.
2. The method according to claim 1, wherein the source of zinc ions and the zinc dissolution accelerating metal are put in a same vessel, brought into direct contact with each other and moved in the vessel in the plating solution by shaking, vibrating or rotating the vessel in order to accelerate zinc dissolution.
3. The method according to claim 1, wherein the source of zinc ions and the zinc dissolution accelerating metal are put in different vessels, connected via an electric conductor, and moved in the vessels in the plating solution by shaking, vibrating or rotating the vessels in order to accelerate zinc dissolution.
4. The method according to any of the claims 1 to 3, wherein the source of zinc ions comprises one or more kinds selected from zinc, zinc alloy, zinc or zinc alloy whose surface is plated or contacted with metal that is more electropositive than zinc, and the zinc dissolution accelerating metal comprises; 1) metal that is more electropositive than zinc, 2) metal that is more electropositive than zinc, with which one or more kinds selected from iron, cobalt, nickel, carbon, silicon, manganese, chromium, molybdenum and tungsten are contacted, 3) metal that is more electropositive than zinc, in which one or more kinds selected from iron, cobalt, nickel, carbon, silicon, manganese, chromium, molybdenum and tungsten are dispersed, 4) alloy comprising metal that is more electropositive than zinc and one or more kinds selected from iron,

cobalt, nickel, carbon, silicon, manganese, chromium, molybdenum and tungsten, or 5) a composite or mixture of two or more kinds selected from above 1) to 4).

5. The method according to any of the claims 1 to 3, wherein a degree of contact both or either of the source of zinc ions and the zinc dissolution accelerating metal have with a plating solution is controlled in response to an analysis of a zinc ion concentration in the plating solution to adjust the zinc ion concentration in the plating solution.

6. The method according to claim 4, wherein the degree of contact both or either of the source of zinc ions and the zinc dissolution accelerating metal have with the plating solution is controlled in response to the analysis of the zinc ion concentration in the plating solution to adjust the zinc ion concentration in the plating solution.